

REMARKS

Claims 33-62 remain pending in this application after entry of this amendment. Claims 1-32 were cancelled herein. Claims 33-62 were added herein.

New claim 33 represents previous claim 1 with the elements of claim 24 incorporated therein. New claim 35 represents an amended version of previous claim 2, now dependent on claim 33. New claim 36 has support at least at page 11, line 26. Claims 37 and 38 represent an amended version of previous claims 25 and 26, and similarly, new claims 39-45 represent an amended version of previous claims 4-10. New claim 46 represents an amended version of previous claim 11 with features of previous claim 28 incorporated therein. Claim 47 is supported at least at page 8, line 34 through page 9, line 20. Claim 48 is supported at least at page 10, lines 2-3. Claim 49 is supported at least at page 11, lines 24-27. Claims 50-51 represent an amended version of previous claims 29 and 30. Claims 52-53, and 55-60 represent an amended version of previous claims 14-15 and 16-21 respectively. Claim 54 represents an amended version of previous claim 31. Claim 61 represents an amended version of previous claim 32. Claim 62 represents an amended version of previous claim 22.

Applicant notes the Examiner's indication that Xu et al., Plant Cell Reports, Vol. 15, pages 91-96 (1995) was not included in the IDS. Applicant submitted another IDS with the May 21, 2004 RCE in which a copy of Xu was provided.

Applicant also notes that the Examiner objects to the specification as failing to provide a brief description of the drawings. Applicant will consider this rejection and provide a brief description of the drawings when the application is otherwise in condition for allowance.

Claims 1, 8, and 15 are objected to because of informalities. Applicant respectfully traverses this rejection.

Claims 1, 2, 4, 5, 7-12, 14-25, 27-29, 31, and 32 are rejected under 35 U.S.C. § 112, second paragraph. Applicant respectfully traverses this rejection.

Claims 1, 2, 4, 5, 7-12, 14-22, 23-25, 27-29, 31, and 32 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Applicant respectfully traverses this rejection.

Claims 1, 2, 4-12, and 14-21 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. Applicant respectfully traverses this rejection.

Claims 1, 2, 4, 5, 7-12, 14, 16-19, 21, 22, 25, 28, 29, 31, and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Beck et al. in combination with Saito, Bouzoubaa, Beck, Hall, Urwin, and Landsman. Applicant respectfully traverses this rejection.

Claims 23, and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Baulcombe, Saito, Bouzoubaa, Hall, Urwin, and Landsman. Applicant respectfully traverses this rejection.

Claim Objections

Claims 1, 8, and 15 are objected to because of informalities. Claims 1, 8, and 15 have been cancelled, and the particular issues that were addressed by the Examiner have not been incorporated into the new claims. Applicant therefore respectfully requests that this objection be withdrawn in light of the newly presented claims and the comments offered above.

Rejections of Claims under 35 U.S.C. § 112, Second Paragraph

Claims 1, 2, 4, 5, 7-12, 14-25, 27-29, 31, and 32 are rejected under 35 U.S.C. § 112, second paragraph. Applicant has considered the Examiner's objections that were noted in the office action and has drafted new claims 33-62 in light of these objections. Applicant therefore respectfully requests that this rejection be withdrawn in light of the newly presented claims.

Rejections of Claims under 35 U.S.C. § 112, First Paragraph

Claims 1, 2, 4, 5, 7-12, 14-22, 23-25, 27-29, 31, and 32 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement.

Claims 1, 2, 4-12, and 14-21 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement.

These rejections should also be moot in light of the newly presented claims, because expression of wild-type TGB2 does not fall under the scope of the newly presented claims. Claims 33-35 are clear that the wild-type TGB2 nucleotide sequence to which mutations are introduced, is not necessarily limited to that exemplified (SEQ ID NO. 1). The resulting mutant nucleotide sequence encodes a mutant TGB2 protein with one or more amino acid substitutions in the hydrophilic region just upstream of the central conserved domain (an downstream of the N-terminal hydrophobic domain). The instructions and guidance that are provided in the

specification are clear and precise: mutations should be made in that particular domain of TGB2. This domain is small, spanning only 9 amino acids. It would thus not involve undue burden for the person skilled in the art to construct and test some other mutated sequences that could work.

Applicant also disagrees with the characterization by the Examiner that "only plants expressing SEQ ID NO:3 inhibited the movement of BNYVV in transgenic plants (office action, page 8). The specification, at page 12, teaches that "decreasing of said effect [local lesions] is mostly observed with the co-inoculation of the mutated sequences (up to 100% inhibition)" (emphasis added). Also, 100% inhibition is not a prerequisite of the invention, a significant increase in resistance is not 100% inhibition.

With respect to previous claim 20, now claim 59, the Examiner should understand that there is a difference between tolerance and resistance. The term "resistance" is used to refer to traits that prevent infection or limit its extent, whereas the term "tolerance" is used to refer to traits that do not reduce or eliminate infection, but instead reduce or offset the fitness consequences.

Furthermore, the issue with respect to the expression of antisense sequences to induce virus resistance in plants is moot in view of the newly presented claims.

Rejection of Claims under 35 U.S.C. § 103

Claims 1, 2, 4, 5, 7-12, 14, 16-19, 21, 22, 25, 28, 29, 31, and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Beck et al. in combination with Saito, Bouzoubaa, Beck, Hall, Urwin, and Landsman.

The subject matter of the newly presented claims, specifically, "one or more amino acid substitutions in the hydrophilic region of TGB2, downstream of the N-terminal hydrophobic domain and just upstream of the central conserved domain" is not taught or suggested by Beck et al.

Beck et al. teaches the replacement of the conserved amino acids in the central hydrophilic domain (thus the central conserved domain of the hydrophilic region of TGB2) (abstract, results, and first paragraph thereof). There is no suggestion or any guidance with respect to modification in the region just upstream thereof. The only working example given in Beck is the 13* protein, which corresponds to a mutated TGB2 with four alanine replacements

and only phenylalanine replacement in part of the conserved hydrophilic domain (see the results, first paragraph thereof in Beck et al. 91 and Fig. 2 of Beck et al. 94).

Saito, Bouzoubaa, Beck, Hall, Urwin, and Landsman fail to remedy the defects of Beck et al.

Claims 23, and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Baulcombe, Saito, Bouzoubaa, Hall, Urwin, and Landsman. The rejection of previous claims 23 and 27 should be rendered moot in view of the newly presented claims.

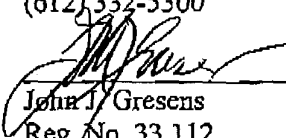
Conclusion

In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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